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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/707,611	12/24/2003	Dana Robert Pettigrew	AP03-06	1610
25759	7590	06/02/2006	EXAMINER	
JOHN J. ELNITSKI, JR. 225 A SNOWBIRD LANE BELLEFONTE, PA 16823			KAPLAN, HAL IRA	
			ART UNIT	PAPER NUMBER
			2836	

DATE MAILED: 06/02/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.		Applicant(s)	
	10/707,611		PETTIGREW, DANA ROBERT	
	Examiner		Art Unit	
	Hal I. Kaplan		2836	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 December 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-16, 19 and 24-30 is/are rejected.
- 7) ☒ Claim(s) 17, 18 and 20-23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 24 December 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION***Specification***

1. The disclosure is objected to because of the following informalities: The brackets around the title of the invention should be removed. Paragraph 1, line 7 contains the word "encounter". It appears this should be "encountered". Paragraph 4, lines 40-41 contain the word "encounter". It appears this should be "encountered". Paragraph 7, lines 3-8 are not in proper idiomatic English and are unclear. Paragraph 7, line 13 contains the phrase "source and configured". It appears this should be "source and is configured". Paragraph 11, lines 5-6 contain the phrase "can be especially applied where". It appears this should be "is especially applicable". Paragraph 11, line 8 contains the phrase "driven by alternating". It appears this should be "driven by an alternating". Paragraph 11, line 35 contains the phrase "voltage, it is capable". It appears this should be "voltage. It is capable". Paragraph 15, line 1 contains the phrase "turns the three". It appears this should be "turns on the three". Paragraph 15, line 7 contains the phrase "whereby, an increase". It appears this should be "an increase". Paragraph 17, lines 57-58 contain the phrase "required setting of the Hertz". It appears this should be "required frequency setting". Paragraph 17, line 58 contains the phrase "generated to". It appears this should be "delivered to", but it is not clear whether this refers to the power delivered by the generator to the motor or the power delivered by the motor to the device powered by the motor. Paragraph 18, line 3 contains the word "it"s". It appears this should be "its". Paragraph 18, line 4 contains

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the phrase "full speed,, a diesel". It appears this should be "full speed, a diesel".

Paragraph 19, line 6 contains the word "then". It appears this should be "the".

Appropriate correction is required.

Drawings

2. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the unit driven by the motor, with a connection to the system controller, as claimed in claims 16, 18, 25, and 27, must be shown in Figures 2 and 3 or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner,

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the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

3. Claims 1, 5, 9, 20, 24, and 26 are objected to because of the following informalities: Claim 1, line 1 contains the phrase "Unknown;Dana Pettigrew;". This should be removed. Claim 1, line 20 contains the word "power". It appears this should be "power source". Claim 5, line 2 contains the phrase "as multi-tap". It appears this should be "as a multi-tap". Claim 9, line 2 contains the word "power". It appears this should be "powered". Claim 20, line 8 contains the phrase "frequency the power". It appears this should be "frequency of the power". Claim 20, line 15 contains the phrase "the using". It appears this should be "using the". Claim 20, line 17 contains the phrase "volts to hertz". It appears this should be "voltage to frequency". Claim 24, lines 2-3 contain the phrase "startup sequence starting sequence". It appears this should be "startup sequence". Claim 26, line 7 contains the phrase "controller set". It appears this should be "controller to set". Claim 26, line 13 contains the phrase "setting of the Hertz". It appears this should be "frequency setting". Appropriate correction is required.

Claim Rejections - 35 USC § 112

4. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

5. Claims 5, 19, and 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

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Claim 5 recites the limitation "said generator is configured as multi-tap voltage generator". The specification does not define a multi-tap generator, and it is not clear what a multi-tap generator is. Voltage taps are usually described with reference to a transformer.

Claim 19 recites the limitation "wherein power engaged from the generator to the motor when the rotational speed ... is at about 30 Hertz". This is not proper idiomatic English and it is not clear what is being claimed. It appears this should read "wherein power is engaged from the generator to the motor when the rotational speed ... is at about 30 Hertz", but this is not clear to the examiner.

Claim 24 recites the limitation "a startup sequence ... using the system controller ... and then setting the rotational speed ... at a higher set speed level, as the power source gains speed ... then engage power from the generator to the motor". This is not proper idiomatic English and it is not clear what is being claimed. Claim 25 inherits this deficiency.

Claim 26 recites the limitation "the normal operating range ... will be in a range of fifty to sixty Hertz range a set point of operational frequency ... is selected in the system controller". This is not proper idiomatic English and it is not clear what is being claimed. Claim 27 inherits this deficiency.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

8. Claims 1, 2, 6, 8, 13, 14, and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over the US patent of Comstock (4,857,755) in view of the US patent of Underwood et al. (6,700,762).

As to claims 1 and 13, Comstock, drawn to a constant power system and method, discloses a variable frequency power system for starting and powering an electrical load comprising: a power source (54,24) with a rotating output, the power source (54,24) having a speed control (56) to regulate rotational speed of the rotating output, the rotational speed of the rotating output being rotational frequency of the rotating output (see column 2, lines 30-32 and column 3, lines 16-19); a generator (44) coupled to and driven by the rotating output of the power source (54,24), whereby speed control of the power source (54,24) directly controls output power frequency of the generator (44) due to control of rotational frequency of the rotating output (see column 2, lines 30-32 and column 3, lines 46-54 and 60-66); a voltage regulator (92) connected between the generator (44) and the load (52) to regulate output voltage emanating from the generator (44) for a supply voltage to an electrical motor load (see

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column 5, lines 1-4); and a system controller (8) to control output power frequency of the generator (44), the system controller (8) connected to interface with the speed control (56) of the power source (54,24) (see column 2, lines 33-35 and column 3, lines 16-19); the system controller (8) configured to monitor generator output and operational conditions of the electrical load (52), the system controller (8) configured to adjust the speed control of the power source (54,24) based on generator output and operational conditions of the electrical load (52) (see column 3, lines 46-66). Comstock does not specify what the load (52) is.

Underwood, drawn to a filter-switched drive operating mode control, discloses a power system coupled to a motor (104) that drives a pump (see column 3, lines 7-9). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the system of Comstock to drive a motor, because such systems are commonly used to drive motors.

As to claims 2 and 14, the power source (54,24) is an engine powered by a fuel source (see column 2, lines 30-32).

As to claim 6, the motor of Underwood is connected to an electrical submersible pump (see column 3, lines 7-17).

As to claim 8, the system of Comstock further includes a switchboard (11) connected between the generator (44) and the load (52) to act as a shutdown switch between the generator (44) and the load (52), the switchboard (11) controlled by the system controller (8) (see column 2, lines 37-40).

As to claim 16, the system of Comstock monitors operating conditions of the load and adjusts the speed of the power source (54,24) to adjust the frequency of the power output of the generator (44) based on required power needs of the load (52) (see column 3, lines 46-66). The amount of power drawn by a motor is dependent on the required power needs of the unit driven by the motor.

9. Claims 3, 7, 9, 11, 12, and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in view of Underwood, and further in view of the US patent of Janssen et al. (6,921,985).

As to claims 3, 9, and 15, Comstock in view of Underwood disclose all of the claimed features, as set forth above, except for an uninterruptible power supply. Janssen, drawn to low voltage ride through for wind turbine generators, discloses an uninterruptible power supply (330) to power electronics of a power system independently of a generator (310) (see column 3, lines 45-48 and 62-64). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use an uninterruptible power supply to power the system of Comstock in view of Underwood, in order to provide power to the motor load when the generator is down.

As to claims 7 and 11, the system of Janssen includes a transformer between the generator (310) and the load (350,360,370) (see column 3, lines 49-53).

As to claim 12, the system of Comstock further includes a switchboard (11) connected between the generator (44) and the load (52) to act as a shutdown switch between the generator (44) and the load (52), the switchboard (11) controlled by the system controller (8) (see column 2, lines 37-40).

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10. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in view of Underwood, and further in view of the US patent of Dhyanchand (5,013,929).

As to claim 4, Comstock in view of Underwood disclose all of the claimed features, as set forth above, except for the voltage regulator being an excitation controller which includes programmable logic. Dhyanchand, drawn to a power conversion system having prime mover start capability, discloses a voltage regulator (44) that is an excitation controller which includes programmable logic so that voltage is adjusted according to rotational frequency of a generator (36) (see column 3, lines 50-61 and column 5, lines 48-65). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the technique of Dhyanchand to adjust the voltage of the generator in the system of Comstock in view of Underwood, in order to increase the efficiency of the system.

11. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in view of Underwood and Janssen, and further in view of Dhyanchand.

As to claim 10, Comstock in view of Underwood, Janssen, and Dhyanchand disclose all of the claimed features, as set forth above.

12. Claim 28 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in view of Underwood, and further in view of the US patent of Raad (6,820,728).

As to claim 28, Comstock discloses all of the claimed features, as set forth above, except for an electrical centrifugal pump. Raad, drawn to an integrated retarder and accessory device, discloses a motor driving an electrical centrifugal pump (see

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column 14, lines 3-7). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the system of Comstock in view of Underwood to drive a motor which drives an electrical centrifugal pump, because the system of Comstock in view of Underwood is not limited to any specific load.

13. Claim 29 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in view of Underwood, and further in view of the US patent of Hu et al. (5,164,651).

As to claim 29, Comstock discloses all of the claimed features, as set forth above, except for an electrical fan. Hu, drawn to a starting-current limiting device for single-phase induction motors used in household electrical equipment, discloses a motor (50) driving an electrical fan (see column 1, lines 14-17 and Figure 2). It would have been obvious to one of ordinary skill in the art, at the time of the invention, to use the system of Comstock in view of Underwood to drive a motor which drives an electrical fan, because the system of Comstock in view of Underwood is not limited to any specific load.

14. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Comstock in view of Underwood, and further in view of the US patent application publication of Inagaki et al. (2004/0251748).

As to claim 30, Comstock discloses all of the claimed features, as set forth above, except for an electrical gas compressor pump. Inagaki, drawn to a linear motor, and linear compressor using the same, discloses a motor driving an electrical gas compressor pump (see paragraph 66, lines 4-5). It would have been obvious to one of

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ordinary skill in the art, at the time of the invention, to use the system of Comstock in view of Underwood to drive a motor which drives an electrical gas compressor pump, because the system of Comstock in view of Underwood is not limited to any specific load.

Allowable Subject Matter

15. Claims 17-18 and 20-23 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

16. The following is a statement of reasons for the indication of allowable subject matter:

Claims 17-18 contain allowable subject matter because none of the prior art of record discloses using the system controller to control a startup sequence to start the power source and generator combination by running the power source at idle with no load from the motor for a specified warm-up period, once warm-up is achieved, using the system controller to adjust the rotational output of the power source to a starting frequency, then using the system controller to adjust the rotational output of the power source to full speed, when the power source ramps up in rotational speed and reaches roughly half final operating rotational speed, using the system controller to engage power from the generator to the motor, in combination with the remaining claimed features.

Claims 20-23 contain allowable subject matter because none of the prior art of

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record discloses using the system controller to control a startup sequence to start the power source and generator combination by running the power source at idle with no load from the motor for a specified warm-up period, once warm-up is achieved, increasing the rotational speed of the rotating output of the power source to a steady operating frequency slightly below full operating frequency of the power source while regulating output voltage from the generator at a reduced output voltage using the voltage regulator, using the system controller to engage the power from the generator to the motor while holding the output voltage fixed at the reduced voltage regardless of change in rotational speed of the power source, after a given period of time elapses, using the system controller to command the voltage regulator to ramp up the output voltage of the generator to achieve the required volts to hertz ratio required by the motor, finally waiting until the system reaches steady operation before bringing the power source to the final operational speed, in combination with the remaining claimed features.

Conclusion

17. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US patents to Simon (Re. 29,579), Mezera et al. (4,322,630), Schultz et al. (5,390,068), and Gillette (6,198,176), and the US patent publication of Sinha (2003/0062775), disclose similar systems.

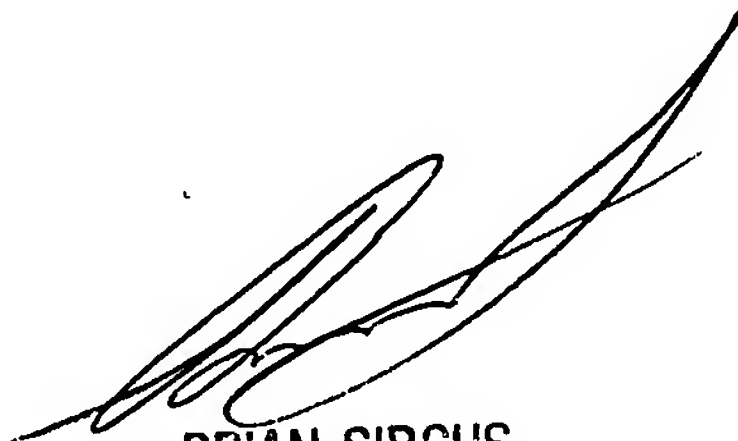
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Hal I. Kaplan whose telephone number is 571-272-8587. The examiner can normally be reached on M-F 8:30-5:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be reached on 571-272-2800 x36. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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